NOVEL PEPTIDE DIMERS AS AGONISTS OF THE ERYTHROPOIETIN (EPO) RECEPTOR, AND ASSOCIATED METHODS OF SYNTHESIS AND USE

ABSTRACT OF THE DISCLOSURE

Novel peptide dimers are provided that bind and activate the erythropoietin receptor (EPO-R) or otherwise act as an EPO agonist. The novel compounds have a first peptide chain R^1 and a second peptide chain R^2, wherein R^1 and R^2 may be the same or different, and are linked through a linking moiety. R^1 is approximately 10 to 40 amino acid residues in length and comprises the sequence $X_3X_4X_5GPX_6TX_7X_8X_9$ (SEQ ID NO: 1) wherein X_3 is C or Hoc, X_4 is R, H, L or W, X_5 is M, F, I or nor-leucine (J), X_6 is any one of the 20 genetically coded L-amino acids or J, X_7 is W, 1-naphthylalanine (B) or 2-naphthylalanine (U), X_8 is D, E, I, L or V, and X_9 is C or Hoc. Similarly, R^2 comprises the sequence $X'_3X'_4X'_5GPX'_6TX'_7X'_8X'_9$ (SEQ ID NO: 2) wherein X'_3 is C or Hoc, X'_4 is R, H, L or W, X'_5 is M, F, I or J, X'_6 is any one of the 20 genetically coded L-amino acids or J, X'_7 is W, B or U, X_8' is D, E, I, L or V, and X'_9 is C or Hoc. Methods for synthesizing the compounds are provided as well, as are pharmaceutical compositions and methods of use.